

REMARKS/ARGUMENTS

Claims 1, 3, 8-10, 21, and 22 are active in the application.

Support for the amendment to Claim 1 is found in now canceled Claim 2.

Support for the amendments to Claim 22 is found in Claim 1.

Claim 3 is amended to depend from Claim 1.

No new matter is added.

In the Advisory Action dated November 22, 2004, the Examiner alleged that Claim 21 constituted new matter. Specifically, the Examiner objected to the limitation where the content of the alcohol-based solvent relative to the amount of the ethylene-vinyl acetate copolymer is at most 325 % and the amount of the alkali catalyst is from 0.5 to 20 mole % with respect to the acetic acid ester component of the ethylene-vinyl acetate copolymer.

However, support for the amendments to Claim 21 is found at page 1, lines 22-25, page 5, lines 21-22 and in Examples 1 and 2 as shown below. In particular, the ratio of solvent to EVAc of at most 325 wt% of alcohol relative to the EVAc is described in the Examples. For reference, Applicants have prepared Summary Tables of these Examples with a calculation of the ratio of solvent to EVAc shown in the far right column. Thus, Claim 21 does not contain new matter.

Example 1:

Materials	Feed rate	Alcohol-based solvent content	EVAc content	Ratio of solvent to EVAc
45% EVAC/alcohol	1300 kg/h	715 kg/h	585 kg/h	$(715+42.5+1100)/585$ =318 wt% alcohol/EVAc
15% NaOH/alcohol	50 kg/h	42.5 kg/h		
100% methanol vapor	1100 kg/h	1100 kg/h		

Example 2:

Materials	Feed rate	Alcohol-based solvent content	EVAc content	Ratio of solvent to EVAc
45% EVAC/alcohol	1300 kg/h	715 kg/h	585 kg/h	(715+85+1100)/585
15% NaOH/alcohol	100 kg/h	85 kg/h		= 325 wt%
100% methanol vapor	1100 kg/h	1100 kg/h		alcohol/EVAc

The present invention is directed to a method for producing a saponified ethylene-vinyl acetate copolymer, which comprises saponifying an ethylene-vinyl acetate copolymer in an alcohol-based solvent in the presence of an alkali catalyst until its saponification degree is at least 98 mol%, wherein from 100 ppm to 15,000 ppm of water (based on the ethylene-vinyl acetate copolymer) is added to the alcohol-based solvent, and a first solution comprising an ethylene-vinyl acetate copolymer and an alcohol-based solvent and a second solution comprising an alkali catalyst and an alcohol-based solvent are introduced into a saponification reaction column through an upper portion thereof, and a vapor of an alcohol-based solvent is introduced into the saponification reaction column through a lower portion thereof.

The rejection of Claims 1-3, 6, and 8-10 under 35 U.S.C. §103(a) over Hart (US 4,377,621) in combination with Hoyt (US 3,985,719) and with Moritani'547 (US 5,744,547), Moritani'165 (US 6,288,165 B1) or Takahashi (US 4,611,029) is respectfully traversed.

The combination of the cited references fails to describe or suggest producing saponified ethylene-vinyl acetate copolymers with a saponification reaction column as claimed nor the advantages of the claimed method which achieves a saponification degree of at least 98 mol% even in the presence of 100 to 15,000 ppm of water.

The Office has maintained that the claimed invention would have been obvious by using the saponification reaction column described in Moritani'547, Moritani'167, and Takahashi, in the process of Hart or Hoyt. Applicants respectfully disagree.

Applicants submit herewith an executed Declaration under CFR §1.132 demonstrating the importance of the claimed method relative to the methods of the prior art. In particular, Applicants demonstrate that the utilization of a saponification reaction column unexpectedly yields a saponification degree of at least 98 mol% even when 100 to 15,000 ppm of water is introduced into the reaction.

Experiment 1 of the Declaration utilizes approximately the same weight ratios of methanol, EVAc, sodium hydroxide and the water content as that described in Example 1 of the specification. Nearly identical temperature and pressure conditions are utilized for the reaction, except that the Experiments in the Declaration are carried out in a conventional autoclave. Despite the nearly identical reaction conditions, a saponification degree of only 88.4 mol% is obtained when reacted in a conventional autoclave. Increasing the reaction time to 5 hours in the autoclave, in Experiment 2 of the Declaration, still produced only 90.6 mol% saponification, which is much lower than the 98 mol% claimed in Claim 1.

Moritani'547, Moritani'167, and Takahashi do not describe or suggest the presence of any water during the reaction in the saponification reaction column (although washing in water *after* the reaction is described). Furthermore, Hart and Hoyt do not describe or suggest the importance of using the saponification reaction column as demonstrated by the Applicants. As such, the claimed invention would not have been obvious in view of the combination of the cited references. Withdrawal of the rejection is requested.

Applicants submit that the application is now in condition for allowance. Early notification of such allowance is earnestly solicited.

Respectfully submitted,

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